

CLAIMS

What is claimed is:

1. A method of data communication over a time division multiplexed bus, including one or more digital signal lines, said method comprising:

5 receiving an analog data signal over a telephone line from a first modem; utilizing a linear coding process to generate a plurality of digitized analog data signal samples from said analog data signal; and

transmitting said plurality of digitized analog data signal samples via said one or more digital signal lines to a second modem.

10 2. The method of claim 1, wherein said linear coding process uses a sampling rate of about 16 kHz with an 8 bits/sample.

3. The method of claim 1, wherein said linear coding process uses a sampling rate of about 32 kHz with an 8 bits/sample.

15 4. The method of claim 1, wherein said second modem is a remote access server modem.

5. The method of claim 4, wherein said plurality of digitized analog data signal samples reach said remote access server modem over an IP link.

6. The method of claim 1, wherein said transmitting transmits said plurality of digitized analog data signal samples via two of said one or more digital signal lines.

20 7. The method of claim 1, wherein prior to said receiving, said method further comprises determining said first modem to be capable of supporting a speed of 64kbps or more.

8. A method of data communication over a first time division multiplexed bus, including one or more digital signal lines, said method comprising:

receiving an analog data signal over a telephone line from a first modem;
utilizing a linear coding process to generate a plurality of digitized analog data signal samples from said analog data signal;
transmitting said plurality of digitized analog data signal samples via said one or more
5 digital signal lines of said first time division multiplexed bus to a second modem;
demodulating said plurality of digitized analog data signal samples by said second modem to generate digital data;
transmitting said digital data by said second modem over one or more digital signal lines of a second time division multiplexed bus.

10 9. The method of claim 8, wherein said linear coding process uses a sampling rate of about 16 kHz with an 8 bits/sample.

10. The method of claim 8, wherein said second modem is a digital loop carrier modem.

11. The method of claim 8, wherein said digital data reach a remote access server
15 over an IP link.

12. The method of claim 8, wherein said transmitting said digital data transmits said digital data via two of said one or more digital signal lines of said second time division multiplexed bus.

13. The method of claim 8, wherein prior to said receiving, said method further
20 comprises determining said first modem to be capable of supporting a speed of 64kbps or more.

14. A data communication system for communication with a first modem over a telephone line, said communication system comprising:

a receiver capable of receiving an analog data signal over said telephone line from said first modem;

a processor capable of applying a linear coding process to said analog data signal to generate a plurality of digitized analog data signal samples; and

5 a transmitter capable of transmitting said plurality of digitized analog data signal samples via one or more digital signal lines of a time division multiplexed bus to a second modem.

15. The communication system of claim 14, wherein said linear coding process uses a sampling rate of about 16 kHz with an 8 bits/sample.

10 16. The communication system of claim 14, wherein said second modem is a remote access server modem.

17. The communication system of claim 16, wherein said plurality of digitized analog data signal samples reach said remote access server modem over an IP link.

15 18. The communication system of claim 14, wherein said transmitter transmits said plurality of digitized analog data signal samples via two of said one or more digital signal lines.

19. The communication system of claim 14, wherein prior to said receiver receiving said analog data signal, said processor determines whether said first modem is capable of supporting a speed of 64kbps or more.

20 20. A data communication system for communication with a first modem over a telephone line, said communication system comprising:

a receiver capable of receiving an analog data signal over a telephone line from a first modem;

a processor capable of applying a linear coding process to said analog data signal to generate a plurality of digitized analog data signal samples;

a transmitter capable of transmitting said plurality of digitized analog data signal samples via one or more digital signal lines of a first time division multiplexed bus;

5 a second modem in communication with said first time division multiplexed bus;

wherein said second modem receives said plurality of digitized analog data signal samples via said one or more digital signal lines of said first time division multiplexed bus, demodulates said plurality of digitized analog data signal samples to generate digital data, and transmits said digital data over one or more digital signal lines of a second time division
10 multiplexed bus.

21. The communication system of claim 20, wherein said linear coding process uses a sampling rate of about 16 kHz with an 8 bits/sample.

22. The communication system of claim 20, wherein said second modem is a digital loop carrier modem.

15 23. The communication system of claim 20, wherein said digital data reach a remote access server over an IP link.

24. The communication system of claim 20, wherein said second modem transmits said digital data via two of said one or more digital signal lines of said second time division multiplexed bus.

20 25. The communication system of claim 20, wherein prior to said receiver receiving said analog data signal, said processor determines whether said first modem is capable of supporting a speed of 64kbps or more.